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Building the capacity for psycho-oncology research: A survey of the research barriers and training needs within the International Psycho-Oncology Society (IPOS)

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Abstract

Background: The International Psycho-Oncology Society (IPOS) is a multidisciplinary professional network that aims to improve psychosocial care for individuals impacted by cancer. IPOS encourages research activity, recognising that a high-quality evidence-base is essential to provide best-practice, data-driven clinical care. This study aimed to determine the barriers to research involvement and the training needs and priorities of IPOS members, with the goal of facilitating the development of training resources tailored to the needs of IPOS members.

Methods: A link to an online, cross-sectional survey was disseminated to all registered members of IPOS via email. The online survey platform SimpleSurvey was used, and questions included demographic characteristics and items related to research interests, involvement, and training needs. High priority research training needs were identified as research tasks respondents rated as highly important, yet possessed a low perceived skill level in.

Results: 32% of IPOS members (n = 142) completed the survey. Participants represented 49 countries and were at a variety of career stages. Overall, participants reported spending an average of 17.3 hours per week on research (range = 0 to 80 hours per week), with 69% of respondents wanting to increase their research involvement. The main barriers to research participation included lack of research funding (80%) and lack of protected time (63%). IPOS members identified five high priority training needs: (1) preparing successful grant applications; (2) preparing research budgets; (3) community-based participatory research; (4) working with decision makers; and (5) finding collaborators or expert consultants. Participants suggested funding access, statistical advisors and networking and mentorship opportunities as ways to enhance research involvement. Members preferred online training modules (39%) and mentorship programs (19%) as methods by which IPOS could provide research support. IPOS

was viewed as being able to contribute to many aspects of research capacity building such as networking, training, and dissemination of research findings.

Conclusions: IPOS has an important role in encouraging research capacity building among members. This survey provides an agenda for workshops and training opportunities. Mainly, for respondents it was less about training in research methods and more about training in how to prepare successful grant applications, including budgets, and receiving mentorship on this as well as having opportunities to collaborate with other researchers.

Introduction

Research is a vital component of the professional profiles of healthcare practitioners and public health organizations.[1,2] Knowledge of health research and the ability to produce and evaluate evidence-based clinical research have widespread implications for both population health and patient care.[2,3] In support, emerging evidence suggests that the ability to implement and co-produce applied health research is directly associated with: (1) improvements in healthcare practitioners' critical thinking and analytic skills, (2) better patient care and outcomes, and (3) enhanced performance of healthcare organizations.[1-3] Practitioners with research skills thus have the potential to carry out clinically-relevant, high quality research within existing healthcare systems, while simultaneously providing high quality care.[2,3]

Despite the emphasis on research as a backbone to evidence-based clinical practice, many clinicians lack advanced research degrees.[4-7] Furthermore, some areas of health practice are considered to lack a strong evidence-based foundation.[8] Active involvement of clinicians in research is generally low, with some studies suggesting it may be as low as 7% of the medical workforce.[9] This may be related to the various barriers clinicians encounter to the successful involvement, production and utilization of research. These barriers include a lack of interest, time, organizational support and research-related skills.[2,3,8,10] Studies among nurses have identified that a lack of self-efficacy, poor knowledge of research methods and/or poor understanding of statistical results, and organizational factors (e.g. management support) are among the top cited reasons for the underutilization of research in practice.[11,12] Likewise, a study among physicians, nurses and allied health professionals identified inadequate time and resources as barriers to participation in research in the clinical setting.[13]

In response to these barriers, research skills training has been integrated into academic curricula and continuing education programs for healthcare practitioners in an attempt to bridge the research-practice gap[7] Moreover, in recent years, network development has been identified as a key strategy in building research capacities, as this facilitates sharing of access and information on potential research.[5,14] Key elements of health networks include promoting multidisciplinary knowledge, facilitating interdisciplinary collaboration, and sharing expertise and resources for research training.[15,16] To accomplish this in the sub-speciality of psycho-oncology, the International Psycho-Oncology Society (IPOS) was created to foster international multidisciplinary collaboration about clinical, educational and research issues pertaining to the psychosocial health of those affected by cancer, their families and care providers.[17] The mission of this society is to promote global excellence in psychosocial care of people affected by cancer through partnerships, research, public policy, advocacy and education.[17] Membership spans 68, with approximately 450 individuals registered across a wide range of disciplines and with varying degrees of experience and current role requirements in clinical and research practice.

The large heterogeneity in IPOS membership however, creates challenges in understanding the research level and expertise of the group; further hindering the development of training and support programs aimed at research capacity building. As such, the research training needs and priorities of this group remain unknown. Given this gap, the purpose of this study was to assess the research training needs and priorities among the largest network of health professionals and researchers working in the discipline of psycho- oncology. The research questions were: (1) What are the barriers faced by members of IPOS to involvement in research?; (2) What are the research training needs and priorities of IPOS members?; and (3) How can these research training needs be addressed?

Materials and Methods

Design

Approved by the McGill University research ethics committee, this online cross-sectional survey examined the research barriers and training needs of IPOS members, and was hosted on the SimpleSurvey platform. The survey was developed based on previous needs assessment studies exploring health professional research training needs[3,7,8,18-20] and followed an iterative approach, with members of the IPOS Research Committee reviewing survey questions to ensure the survey was appropriate.

Study Sample

The project aimed to recruit approximately 150 IPOS members. The pool of potential participants included approximately 450 IPOS members across 67 countries. Recruitment of 150 participants was predicted to be feasible based on mean response rates for needs assessments.[19] Eligible participants included anyone holding IPOS membership, who was able to complete an online survey in English, regardless of his/her profession and research experience level.

Recruitment

To recruit potential participants, an email containing all study information was sent to IPOS members by the IPOS administrative office using the listserv. Interested participants were instructed to follow the link to the online survey where they were able to read the study information and consent statement. Participants were informed that participation in the study was voluntary and their decision to participate (or not) would not adversely affect their IPOS membership.

Measures

The needs assessment questionnaire included seven sections. The first section contained eight questions gathering basic demographic information (e.g., education level, career information). The last question in this section asked participants to list up to three areas of research interest. The second section had seven questions that assessed current and desired level of research involvement and participants' views on the role of IPOS. The following two sections explored participants' self-reported research skill and perceived research training needs across various research activities. Perceived research skill was assessed on a 3-point scale (1 = basic, 3 = advanced) and perceived research training needs were assessed on a 4-point scale (1 = not important, 4 = very important). Participants were also asked to list up to three research-related priority areas in which they would like to receive further training. This was followed by a further two sections, one probing participant's barriers to research involvement, the other exploring activities to facilitate research engagement. Throughout these sections open-ended questions were also included to allow participants to express needs and preferences that were not covered in the set survey options. The final section provided participants with the opportunity to provide any additional comments regarding activities important to professional development and research engagement within community organizations.

Data Analysis

The data were analyzed using RStudio. Data were downloaded from the SimpleSurvey website to a Microsoft Excel file. Participants who completed less than 50% of the survey were excluded from data analysis. Descriptive statistics were obtained to describe the sample of

participants. Means were derived using the actual number of respondents to the question of interest as the denominator.

High priority research training needs were defined as areas where participants classified their current skill level as low, but felt the area was highly important for their research training. The method to identify training needs was adapted from the Hennessy Hicks Training Needs Analysis Questionnaire.[19] The current skill level and importance score for each item was transformed into a score on a scale from 0 to 100 to ensure comparability across different Likert scales, with 100 representing high skill or importance respectively. For each item, a participant's individual score for skill was subtracted from their importance score. The average of these individual differences represented the research needs score, with a higher score indicating a higher research need. As this method depends on individual level scores of skill level and importance, only respondents who completed all questions pertaining to skill and importance were included in this analysis. Descriptive characteristics of the sub-sample used for the research needs analysis was compared to the sample of excluded participants to ensure the samples were comparable using t-tests and chi-square analyses, with a significance level of 0.05 to assign statistical significance.

Responses to open-ended questions were analyzed using open coding, in which similar responses were grouped together into meaningful categories illustrating research needs and/or preferences. When appropriate, the categories were then grouped into clusters to identify broader themes. Consensus of themes was achieved through discussion among the research team.

Results

A total of 145 IPOS members submitted their survey. Three submissions were excluded from all analyses, as there were significant amounts of missing data, resulting in a sample of 142 completed surveys.

Demographics

Survey respondents (see demographics Table 1) practiced in 49 different countries, with most respondents from the United States of America (9.4%), Australia (11.9%) or India (11.1%). Most respondents had a graduate or professional degree (n = 135, 95%). Participants had worked in psycho-oncology for an average of 10 years (SD = 9.2 years) and 60% identified as at least mid-career. The majority of participants had a primary professional role as a researcher/academic (n = 59, 42%) or clinician (n = 42, 30%), working in a university (n=52, 37%) or health authority/hospital (n=34, 24%) setting in the field of psychology/behavioural sciences (n=75, 53%). The sub-sample (n =115) used for the research needs assessment was comparable to the full sample based on the characteristics shown in Table 1 and their level of research involvement. As can be seen in Table 1, some differences for country, education, and professional field are noted between the overall IPOS membership and this study sample.

Research Interest and Involvement

Overall, participants reported spending an average of 17.3 hours per week (SD = 17 hours per week) on research activities and 69% indicated a desire to increase their research involvement. Most respondents (n = 127, 89.4%) saw research as a challenge they would like to pursue or as an opportunity for development (n = 130, 91.6%). The desire to increase research

involvement was highest among clinicians and healthcare providers, with 83% and 82% expressing this interest, respectively. Currently, many IPOS members indicated having some degree of research experience, either as a team member (39%), an experienced researcher (24%) or managing their own project as clinician researchers (21%). 76% of respondents were currently involved in one to seven research projects, 10% were involved in 8 or more projects and 14% of participants had no current involvement with research projects (however did in the past). Research related training had been received by 67% of respondents in the past three years. When asked about research activities, most IPOS members had participated in proposal writing (n = 113, 79.6%) or development (n = 108, 76.1%), presenting research findings at professional meetings (n = 112, 78.9%) and managing data (n = 107, 75.4%). Half of respondents had applied for research funds and/or written a grant proposal (53.5%). When asked to list top research interests (open-ended question), recurrent themes included psychological/emotional impact of cancer; familial impact of cancer; quality of life; communication between patients, healthcare providers and within the family; financial costs incurred by families; intervention development and evaluation; and outcomes within culturally diverse groups.

Barriers to Research Involvement

Fourteen barriers to research involvement were explored among respondents (Figure 1). The desire of IPOS members to be involved in research was reinforced as less than 8% of participants indicated a lack of interest in research as a barrier to research participation. Lack of funding was the most prominent barrier; classified as a major or moderate barrier by 80% of respondents. This was followed by lack of protected time/competing demands at 63% of

participants. Lack of access to data (43%) and to collaborations or expert consultants (41%) also posed a barrier for many members.

Activities to facilitate research involvement

IPOS members showed strong agreement that all activities listed in Figure 2 would increase their involvement in research activities. Access to research funding and collaboration with other centres were the two activities that had the highest agreement among participants as ways to increase research involvement, with 95% of participants agreeing or strongly agreeing that these activities would encourage research activity. The three least-endorsed activities, with the most respondents disagreeing or strongly disagreeing that the activities could enhance research activity were more exposure to research during undergraduate studies (34%), workshops to develop research questions (25%) and help starting a research project (25%). When asked what else they needed to conduct research (open-ended question), two recurrent themes were receiving mentorship from more experienced individuals and a need for more resources (time, staff, equipment and/or funding) to conduct research.

Research Training Needs

Of the 22 research skills presented to participants (see Table 2), the five areas where respondents reported the strongest skill levels were: conducting literature reviews, recruiting study participants, generating research questions, presenting research findings, and quantitative research methods/analysis. The five areas that participants felt were most important to receive training in were: writing successful grant applications, preparing research budgets, working with decision makers, and finding research partners/expert consultants. Based on these results, priority research training needs were identified as areas that individuals felt were highly important, yet

had a low skill level. The top priority research training needs for IPOS members were: (1) preparing successful grant applications; (2) preparing research budgets; (3) community-based participatory research; (4) working with decision makers; (5) finding collaborators or expert consultants; and (6) qualitative methodology (Table 2).

Role of IPOS

All responsibilities of IPOS were perceived as important or highly important by over 80% of respondents (Figure 3). Participants viewed IPOS as having an important role in facilitating networking opportunities, developing/providing resources to encourage research (e.g. protocol writing guide) and supporting dissemination of research amongst society members. Participants' comments (in the open-ended comment box) further echoed these findings, highlighting their perception that IPOS should build research capacity among members (e.g. through training or facilitating collaboration among IPOS members), support researchers from low- and middle income countries and provide assistance to members with English as a second language, enabling them to publish and communicate their research findings. Although all responsibilities were considered important by most respondents, the least important priorities for IPOS were in providing research methods training and promoting funding for research activities.

74.8% of participants indicated interest in attending research training workshops organized by IPOS prior to the annual conference. Additionally, the most popular chosen method when asked how should IPOS provide further research training was online modules offered on IPOS website (n=55, 39.3%). This method was followed by a research mentoring program (n =

26, 18.6%), face-to-face workshop at the annual conference (n = 24, 17.1%), and webinars (n = 19, 13.6%).

Discussion

Research networks play an important role in building research capacity, as they have the ability to foster networking, research collaborations, mentorship and skill building opportunities.[16,21] To better support members of IPOS, this study evaluated the research interests and training needs of its members. This study showed that many IPOS members are actively involved in research and there is a strong interest for this involvement to increase. With members already eager to engage in research activities, it is important for IPOS to support this interest through the development of training and networking opportunities to provide members with the tools they need to increase their research involvement and overcome barriers to research engagement currently reported.

This needs assessment established that the top six priority areas for resource development and training are: (1) preparing successful grant applications; (2) preparing research budgets; (3) community-based participatory research; (4) working with decision makers; and (5) finding collaborators or expert consultants. These areas reflect a need for both skill building and facilitation of collaboration and networking opportunities, both of which are key aspects of research capacity building.[22] Unlike other research needs assessments, the tops 5 research training needs identified were not about specific to research methods or study execution per se, potentially because securing funding is needed before being able to conduct the study. Survey answers also emphasized a need to connect and collaborate with other researchers.

The top research barrier was lack of funding and the provision of training in preparing grant applications and research budgets may alleviate this barrier by increasing IPOS members ability to both procure and efficiently manage research resources. Lack of resources and funding is a common research barrier that have been identified in needs assessments among many healthcare professionals and research organizations.[3,14,18,23] Without policy-level changes to the availability of research funding, skill building in this area is important to maximise the success of funding applications.

There is a growing interest and value placed on community-based participatory research and the engagement of research users throughout the research process.[24,25] Involvement of research users and other stakeholders in primary research can enhance the quality and relevance of research projects[24] and is an important component of research capacity development.[13] Participatory approaches to the development of programs can enhance their uptake and acceptance when implemented in real world settings.[26] The value of community engagement in research was clearly recognized by IPOS members as a top training priority, perhaps it is seen as a way to ensure better translation of research into practice and increase the societal impact of research findings. Similarly, IPOS members were interested in building skills to work with decision makers. Engaging individuals with the authority to implement the results of research on a larger scale is vital to increase the impact of research and also ensure those impacts are sustained long term.[27]

Collaboration with other researchers or organizations can facilitate the sharing of skills and resources to increase research capacity and quality.[16] International research networks can facilitate international research projects (e.g. recruitment of participants in different countries)

and studies involving research collaboration are often more highly cited, improving the dissemination of research results.[16] IPOS is in a position to help establish collaborations across member countries and disciplines given its diverse membership. Increased collaborative activities among IPOS members may allow the pooling of resources and expertise to improve research quality and facilitate networking across the research network.

Beyond the interest in IPOS facilitating collaboration opportunities, there was also an interest in the provision of mentorship to members. Mentorship can be a highly rewarding experience for mentees and mentors, both personally and professionally, with evidence showing that mentorship and networking contribute to later career success.[21,28,29] Professional societies can play an important role in facilitating mentorship relationships that extend beyond an individual's primary institution, guiding individual career paths and training goals.[21] Providing mentorship opportunities within IPOS has the potential to encourage younger members to remain within the society and continue to work in the psycho-oncology field.[21]

This study is one of few that has examined the training needs of a multidisciplinary, international health network, thereby contributing to the growing body of literature on research capacity building and training needs among healthcare professionals and researchers. Other large-scale health networks that also wish to address training needs within their membership may therefore use the present study to inform their methodology and analysis. Furthermore, research networks may encounter similar training needs and/or barriers to research involvement. As such, training resources and solutions to common challenges may be shared across research networks.

The present study has several practical implications for IPOS, who can directly implement the findings of this study. Research capacity building has been linked to improved clinician competencies and patient outcomes[1,2], therefore, the successful implementation of

these results may have far reaching effects within the practices of individual IPOS members and working towards the shared mission of the society. Based on study findings, the recommendation is for IPOS to develop an online research training program, with modules primarily focusing on establishing research team and collaborations, integrated knowledge translation (involvement of the public and decision makers in research) and writing grants. Another strategy to address IPOS members' research training needs would be to develop a peer mentorship program.

This study has several limitations. The survey was voluntary; therefore, the sample of members who completed the survey may not be representative of the entire IPOS membership. Members with higher interest in research or who perceive a greater number of barriers to conducting their own research may have been more likely to respond to the survey, limiting the generalizability of these findings. As those with an interest in research may be more likely to participate in future training events, the results of this needs assessment will still be informative to future program development within IPOS. However, consideration of how to better engage and develop programs suited to individuals with low research experience or interest is required.

The survey was only available in English due to resource limitations. Although IPOS is an international research network with English as the primary language of communication, translation of the survey into other languages may have encouraged more participation among members for whom English is a second language. Recruitment of participants was slow, however, we found that distributing a stand-alone email invitation to participate in the study rather than including this information in pre-existing newsletters made a significant impact on participation rates.

Conclusion

Research networks play a valuable role in building research capacity and fostering collaboration and communication among members. Assessing the needs of IPOS members is essential to ensure training events and programs developed are informed by and align with the needs and interest of its members. IPOS is composed of a highly diverse membership base, with survey respondents including healthcare professionals, researchers, academics and early career researchers spread across 49 countries. Based on study findings, the recommendation is for IPOS to develop an online research training program, with modules primarily focusing on establishing research team and collaborations, integrated knowledge translation (involvement of the public and decision makers in research) and writing grants. Another strategy to address IPOS members' research training needs would be to develop a peer mentorship program.

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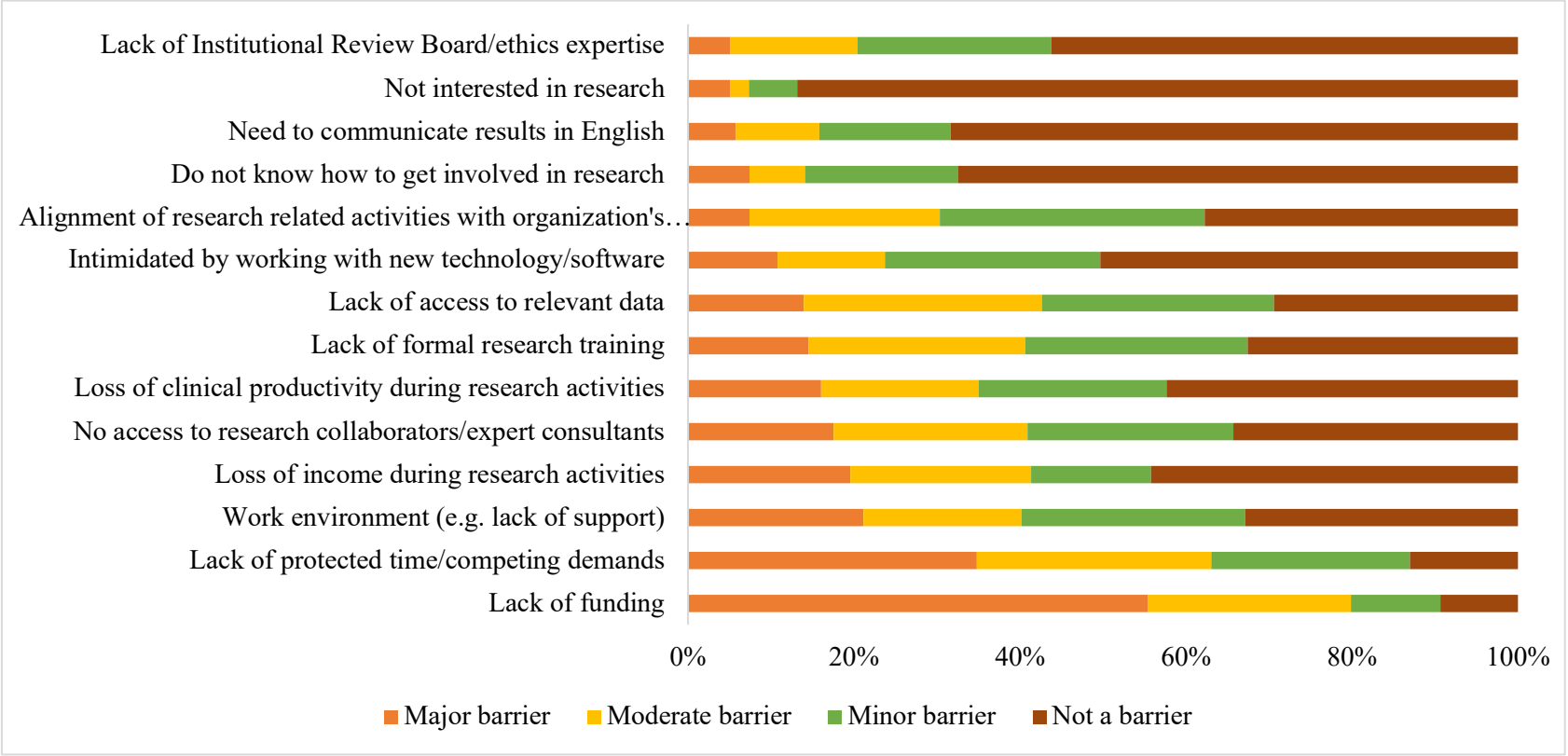

Figure 1: Barriers to research participation. IPOS members were asked whether the topic listed was a major (orange), moderate (yellow), minor (green) barrier or was not a barrier (purple) to research engagement. The percentage of respondents from the full sample (n = 142) that selected each category is shown.

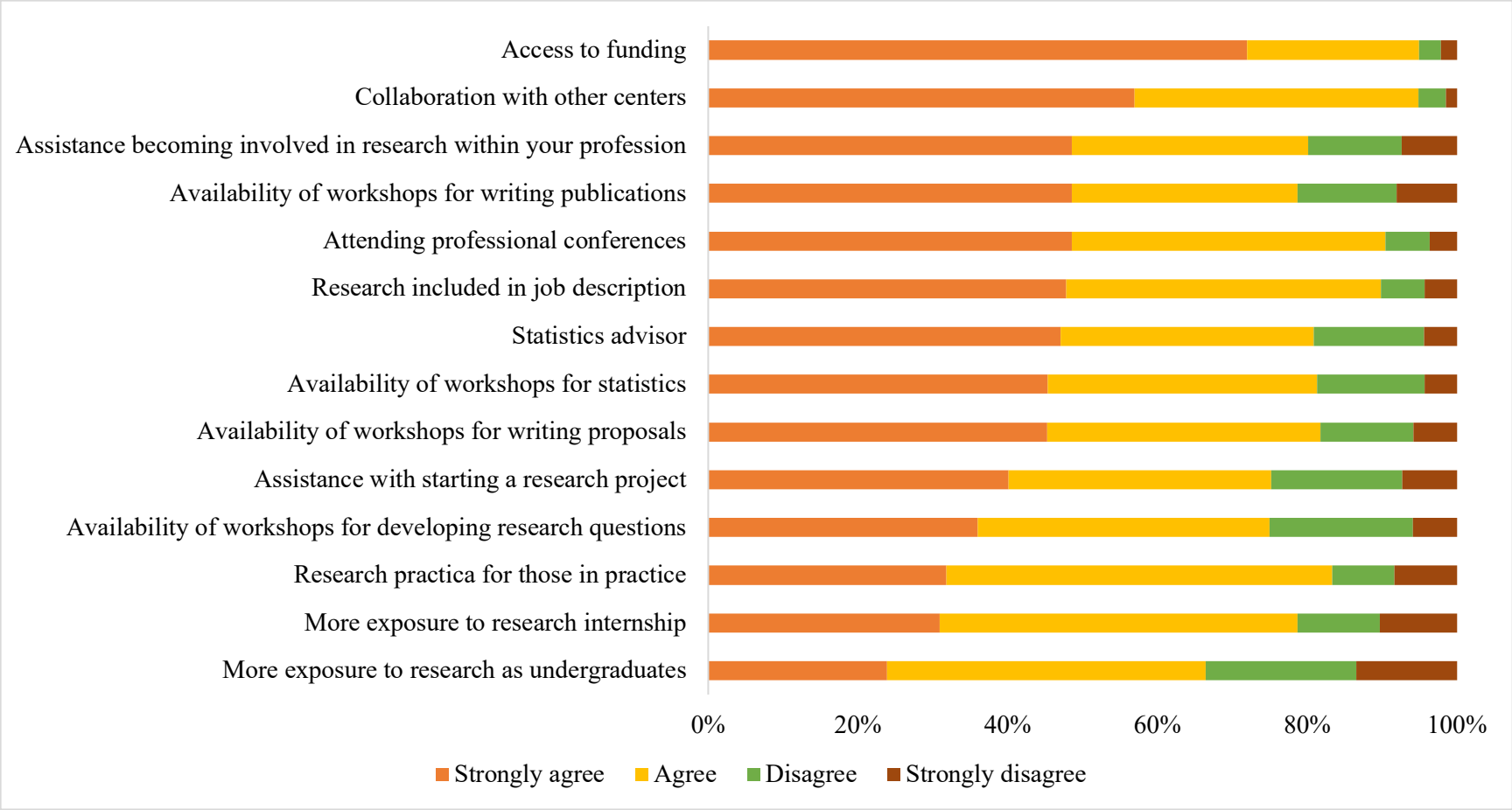

Figure 2: Activities to increase research involvement of IPOS members. Participants were asked to what extent they agreed that the listed activity could increase their participation in research. The percentage of respondents from the full sample (n = 142) that selected each category is shown. Strongly agree is shown in orange, agree in yellow, disagree in green and strongly disagree in purple.

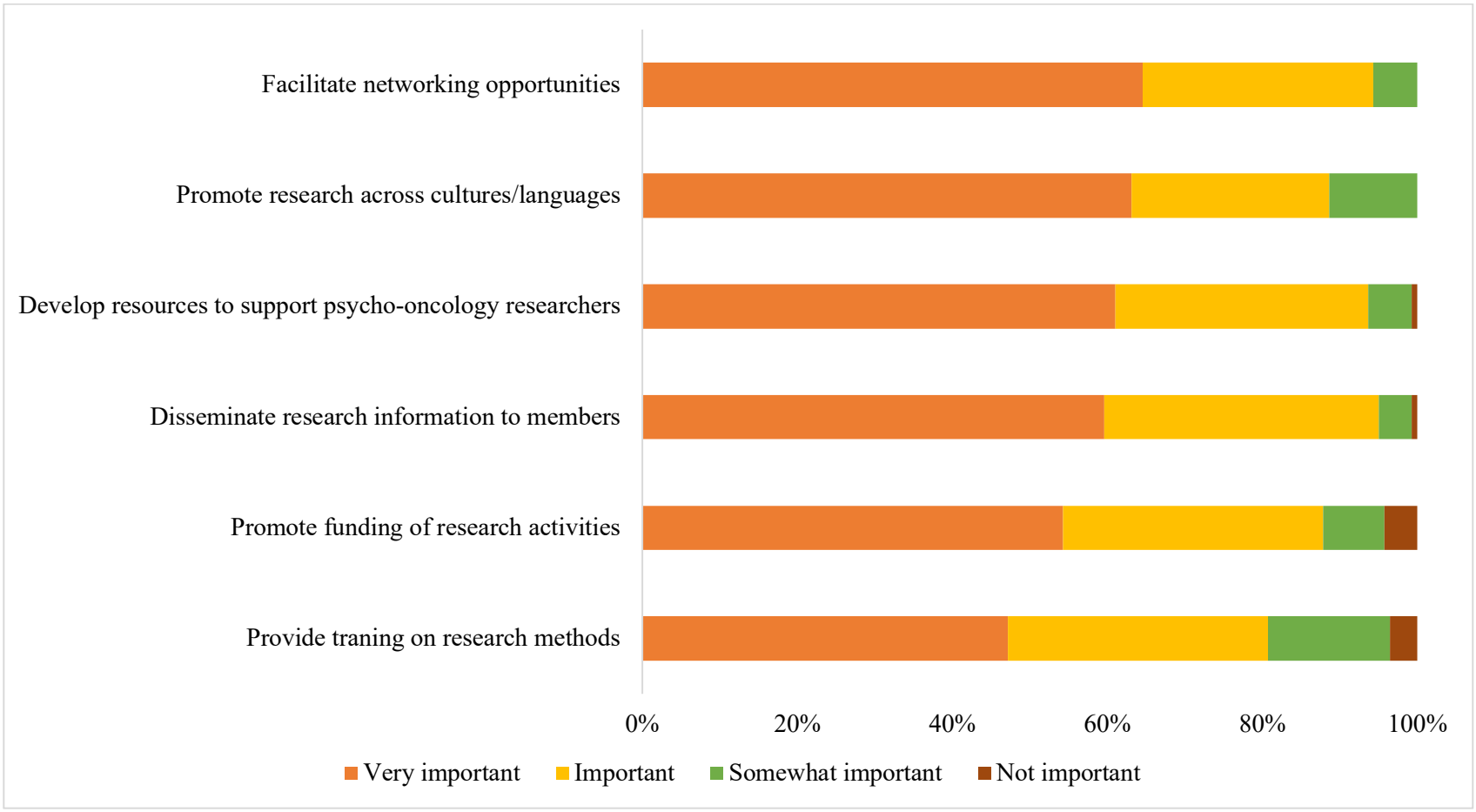

Figure 3: The role of the International Psycho-Oncology Society. Respondents categorized each IPOS role as very important (orange), important (yellow), somewhat important (green) or not important (purple). The percentage of respondents selecting each response category is displayed.

Table 1: Descriptive characteristics of survey respondents

	Survey respondents (N=142, unless otherwise indicated)		**IPOS Membership** (N=485)	
	Number	Percentage (%)	Number[b]	Percentage (%)
Country (Top 5) (n= 126)				
United States of America	12	9.5	79	16.3
Australia	15	11.9	55	11.3
India	14	11.1	30	6.2
United Kingdom	6	4.8	21	4.3
Nigeria	5	4.0	6	1.2
Canada	2	1.6	27	5.6
Peru	1	0.8	22	4.5
Career Stage (N= 141)				
Just getting started (<2 years)/student	15	11		
Early career (2-5 years)	41	29		
Mid-career (6-10 years)	31	22		
Late career (10+ years)	54	38		
Primary Professional Role (N= 141)				
Researcher/Academic	59	42		
Clinician	42	30		
Healthcare provider	17	12		
Student/Trainee	17	12		
Public Servant	2	1.4		

	Survey respondents (N=142, unless otherwise indicated)		IPOS Membership (N=485)	
	Number	Percentage (%)	Number[b]	Percentage (%)
Knowledge Broker	2	1.4		
Other	2	1.4		
Primary Work Environment				
University/College	52	37		
Health Authority/hospital	34	24		
Research Institute	27	19		
Private Sector	14	9.9		
Not for Profit Organization	12	8.4		
Government	2	1.4		
Other	1	0.7		
Education (N=173 responses[a])				
MD	26	15.0	68	14.0
Doctoral Level	70	40.5	172	35.5
Master Level	57	32.9	73	15.1
Bachelor Level	20	11.6	39	8.0
Primary Professional Field				
Psychology/Behavioural Sciences	77	53.0	251	51.8
Nursing	14	9.9	28	5.8
Oncology	13	9.2	16	3.3
Psychiatry	12	8.5	73	15.1

	Survey respondents (N=142, unless otherwise indicated)		**IPOS Membership** (N=485)	
	Number	Percentage (%)	Number[b]	Percentage (%)
Public Health	7	4.9	3	0.6
Social Work	4	2.8	14	2.9
Occupational Therapy	2	1.4	1	0.2
Primary Care	1	0.7	1	0.2
Surgery	1	0.7	0	0
Physiotherapy	1	0.7	1	0.2
Other/no answer	10	8.5	23	4.7

[a]Respondents were able to select multiple educational levels, [b]If cell empty, no data available

Table 2: Research training needs (n = 115)

Topic	Importance for training (mean score)[a]	Current skill level (mean score)[b]	Research Training Needs Score[c]
Writing successful grant applications	80.1	33.0	47.1
Preparing a research budget	71.6	30.0	41.6
Community-based participatory research	64.6	23.5	41.1
Working with decision makers	70.7	33.0	37.7
Finding research partners/expert consultants	65.8	33.0	32.8
Qualitative methodology	70.8	38.7	32.1
Qualitative data collection and analysis	69.6	40.0	29.6
Using research to inform programs/services	68.7	42.2	26.5
Determining sample size	63.4	37.4	26.0
Developing a research program	65.5	43.5	22.1
Engaging the community	64.5	44.4	20.2
Writing for publication	68.5	51.3	17.6
Writing an ethics application	60.6	50.0	10.6

Project management	58.6	48.7	9.85
Designing research study	62.6	53.9	8.70
Research methods (identifying research measures)	62.0	55.2	6.82
Writing research proposals	66.4	53.5	1.92
Quantitative data collection and analysis	58.3	56.5	1.73
Presenting research at professional meetings	59.8	58.7	1.09
Conducting literature reviews	51.3	65.2	-13.9
Participant recruitment	55.4	64.4	-8.99
Research question generation	54.5	62.2	-7.65

[a]Score increases with importance

[b]Score increases with skill level

[c]A high score indicates a higher priority research need